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Examining the relationship between working capital management and firm performance: a state-of-the-art literature review and visualisation analysis

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Abstract: The current study concentrates on a systematic review of literature related to the impact of working capital management on firm performance. The main purpose of the study is the overall state-of-the-art literature review process. The review was done with overall 55 publications. The paper rigorously examines the influential studies in the literature related to the impact of working capital management on firm performance. The study found an inadequate literature review on working capital management on firm performance. The study needs to answer the two main research questions: 1) what are the determinants and practices of working capital management, 2) the impact of working capital management on higher firm performances. Our findings include firstly a majority of the researchers proved a working capital management positive effect on firm performance. Secondly, most of the research was published in the USA, and the UK countries while limited studies have focused on emerging The current study provides a research gap and future agenda for firm managers and researchers.

Keywords: benchmarking; working capital management; WCM; firm performance; FP; working capital management theory; state of the art literature review; visualisation analysis.

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1 Introduction

Working capital management (WCM) involves the efficient management of a company's current assets and liabilities to ensure that the company has sufficient financial resources to operate effectively (Seth et al., 2020). It is a vital aspect of a company's financial planning and plays an important role in determining a company's success or failure. In essence, WCM focuses on the short-term liquidity of a company's assets and liabilities. A company should have adequate working capital to maintain a healthy level of liquidity and provide sufficient funds for operations. Furthermore, WCM also helps to reduce costs associated with carrying excess inventory or debt. The aim of this paper is to examine the impact of WCM on firm performance (FP). The paper will review the current literature on the topic and present empirical evidence to support the thesis that effective WCM has a positive impact on FP (Gunasekaran et al., 2017). Finally, recommendations are provided on how firms can better manage their working capital to improve performance.

Major theoretical advancements in the fields of long-term investing and financial decision-making have taken place over the past 40 years. In industrial practice, many of these novel ideas and associated methods are currently being used successfully. WCM, in particular, has received far less attention than the field of short-term finance. The importance of working capital is indisputable, but day-to-day management is different from capital budgeting. Working capital and its management are affected by inefficiencies at all levels of management. Sawarni et al. (2021) examined the impact of WCM on the performance of Indian companies and it shows the influences of a firm's businesses to provide future direction to the firm. The significance of the relationship is based on its firm's nature. Zimon and Tarighi (2021) studied the effect of a COVID-19 pandemic on WCM policies among polish small and medium-scale industries under group purchase organising. Small industries get high sales of returns when compared to large. There are many (Kebede, 2021) countries research on the impact of WCM on firm profitability of wholesale trade firms in Addis Ababa Ethiopia. According to Panda et al. (2021), WCM strategies will maximise the profitability and macroeconomic parameters that could significantly influence Indian SMEs. Bhuyan et al. (2021) provides complete information about WCM in emerging markets and its FPs in the manufacturing sector.

The aim of WCM is to ensure an optimal level of current assets and liabilities in order to maximise WCE and maximise shareholder returns (Wamba et al., 2017). This is accomplished by optimising the balance between working capital and other resources such as debt and equity. Working capital requirements, such as inventories, receivables, payables, and cash needs, must be managed within an organisation to maximise firm's performance. Studies have found that WCM has a strong and positive association with FP and profitability. Banerjee and Deb (2023) studied the relationship between WCM and its impact on FP of the listed US firms. The findings of the study showed that a decreased

investment in the short-term assets and liabilities led to positive outcomes, such as return on capital employed, return on assets (ROA), and operating income (Akteer et al., 2016).

The main objective of the paper proposes an extensive literature review of WCM on FP. More specifically the objectives are

- provide WCM and FP into categories based on their approaches and methods
- to analyse the problem of WCM and FP and provide future direction
- synthesise the existing literature review of WCM on FP.

Another study by Garg et al. (2021) evaluated the effects of WCM on FP of Indian banking firms. The results of the study indicate a significant and positive relationship between WCM and financial performance, such as profitability and liquidity. The authors conclude that increasing working capital can provide significant financial benefits to the bank and its investors. Seth et al. (2020) evaluated the impact of WCM on FP of public listed companies from the automotive, chemical and metallurgy industries in Iran. Results of the study showed that WCM had a positive and significant effect on FP (Mani et al., 2018). The authors conclude that proper WCM is the key to improved FP.

Overall, this literature review shows that WCM has a positive and significant effect on FP. It is important to manage working capital efficiently in order to maximise FP and increase return on investment. Ighoroje and Umeora (2022) explained impact of WCM optimality on firm value in the Nigerian consumer goods sector. Chalmers and Zieliński's (2022) findings imply that WCM has a major impact on a firm's financial success in terms of growth and profitability. Inventory management does have an impact on a company's growth, and accounts payable management has a big impact on a company's profitability when looking at component-wise results (Oey and Nofrimurti, 2018).

The article gives information by section overall. WCM is covered in the first section, which also contains a thorough literature analysis and theoretical foundation. The study's methodology review is presented in the third section, followed by data analysis in the fourth, the research's scope in the fifth, future directions in the sixth, and the study's conclusion in the seventh.

2 Literature review

2.1 Concept of WCM

The term WCM refers to all management choices that affect the amount and efficiency of the working capital. For the financial well-being of both small and large organisations, WCM is crucial. Since working capital expenditures are frequently high related to the overall quantity of assets used, it is crucial to make sure that assets are used effectively. working capital means a balance between the current assets and current liabilities. A business's working capital is sometimes referred to as its life force. Working capital refers to the money needed for a business's daily operations. There are two concepts of working capital in financial literature: gross and net. As a result, the concept of working capital refers to current assets such as cash, marketable securities, inventories of raw materials, work-in-process, finished items, and receivables. Working capital, according to the net idea, is the difference between current assets and current liabilities. Working

capital can often be divided into fixed or permanent and variable or fluctuating components (Singh and Ahuja, 2015).

The additional working capital required to support the fluctuating business activities is referred to as variable working capital, while the minimal level of investment in current assets consistently used in a business is referred to as fixed or stable working capital. Two categories of gross working capital and net working capital are typical parts of working capital. the total of all current assets is known as gross working capital and the differences between current assets and current liabilities are known as net working capital.

- Current assets include:
 - stock or inventory
 - debtors
 - trade credit
 - cash in hand
 - short-term securities
- Current liabilities include:
 - bank overdraft
 - outstanding tax
 - other short-term loans
 - payment due to creditors.

Working capital requirements are related to the earning and spending process. Cash is constantly moving from customers and debtors to suppliers and creditors on the one hand, and vice versa. The matching of current assets and current liability movements through time would seem to be the primary function of WCM, according to this.

2.2 *Measurements*

The cash conversion cycle (CCC) is a well-liked metric of WCM that is used in numerous studies analysing (Martínez-Solano and García-Teruel, 2011) the impact of WCM on the firm's profitability. CCC is the amount of time that passes between buying raw materials and receiving payment for finished items. A longer cycle entails more working capital investment. In general, increased profitability results from lowering CCC to a tolerable minimum.

$$\text{CCC} = \text{number of days inventories} + \text{number of days account receivable} - \text{number of days account payable.}$$

2.3 *WCM and FP*

Martínez-Solano and García-Teruel's (2011) first study was done on the effects of WCM on the small-medium scale industry's profitability. The study focuses on the endogeneity problems and the effect the of CCC on corporate profitability. The data was collected from 8,872 small-medium scale enterprises covering the period of 1996–2002. In the same era, Sharma and Kumar (2011) argues that the positive effect of WCM on firm profitability can be empirically proven in India.

Takon and Atseye (2015) explored the effect of WCM on firm profitability in Nigerian quoted companies. It can create value for their companies through working capital. Aregbeyen (2013) empirically investigated WCM and firm profitability with 48 large firms in Nigeria. The paper concludes to improve the level of WCM should shorten on average collection period, average pay period, and inventory turnover days and reduce the CCC.

Pratap Singh and Kumar (2014) indicates a complete overview of WCM review and provides future direction to researchers and firms. Kroes and Manikas (2014) explored longitudinal perspective of cash flow management on FP. Yazdanfar and Öhman (2014) empirically investigated the impact of the CCC on firm profitability and it does show a positive relationship. The data was extracted from Swedish. Hassan et al. (2014), in Pakistan listed firms empirically proved that WCM will increase the FP with different strategies.

Pucci et al. (2015) provides the relationship between intellectual capital and FP. it does have based on secondary data. Wasiuzzaman (2015) suggests that working capital is more efficient and effective use in emerging markets. In some countries WCM negatively impacts the FP in this way (Jahfer, 2015) Sri Lanka has empirically proven that its WCM is one of the reasons to increase firm profitability.

Orobia et al. (2016) argues why some small businesses ignore the WCM routines. The study provides some strategies to improve the growth of the firm. Gambo and Shuaib (2016) empirically proved the role of WCM on firm profitability in respective to food and beverage in India. Bhatia and Srivastava (2016) concentrate on the increase of FP because emerging economies also provide the data. Additionally, Singh et al.'s (2017) meta-analysis provided quantitative studies and empirically proven studies, all the data is based upon WCM and firm profitability. According to Konak and Güner (2016), some small-scale industries provide firm positions and their financial situations all the information is included in this study.

The authors empirically examined the relationship between WCM and FP, firm profitability in different countries, and firms (Abuhommous, 2017; Sudiyatno et al., 2017; Herciu, 2017; Nuhui and Dërmaku, 2017; Nurein and Din, 2017; Simon et al., 2017; Singh et al., 2017; Usman et al., 2017; Zariyawati et al., 2017) proposes (Buallay, 2017) that relationship between intellectual capital and FP.

Arachchi et al. (2018) studied the effect of WCM on firm value in the field of the frontier market the findings could be given in the systematic literature review part. Ali et al. (2019) suggested that small-scale industries' performance is based upon the supply chain network. Altaf and Ahmad (2019) used the relationship between financial constraints and FP. Ren et al. (2019) also empirically proves the relationship with FP.

Hassan et al.'s (2017) study was done on Rutland water processing firms with respective WCM firm financial performance. According to Altaf (2020), the mediating effect of financial flexibility on Indian hospitality firms can positive impact. According to Phuong and Hung (2020), a lot of researches focus on WCM on FP.

There are many research studies on WCM on FP (Altaf, 2020; Altaf and Ahmad, 2019; Anton and Afloarei Nucu, 2020; Sudiyatno et al., 2017; Bhatia and Srivastava, 2016; Bhutto et al., 2015; Bhuyan et al., 2021; Chalmers and Zieliński, 2022; Ighoroje and Umeora, 2022; Kayani et al., 2020; Nurein and Din, 2017; Panda et al., 2021; Ren et al., 2019; Tariq and Rehan, 2013). There are many studies conducted on WCM in manufacturing and service industries (Ahmad et al., n.d.; Sudiyatno et al., 2017; Enqvist et al., 2014; Hazineli, n.d.; Kroes and Manikas, 2014; Padachi, 2006; Parvez, 2020).

Many studies have empirically proven WCM is a positive and significant impact on FP. A WCM literature review (Pratap Singh and Kumar, 2014) provides an overview of WCM and its impact on FP and the growth of the organisation. Additionally, Nuhui and D ermaku (2017) provides a theoretical review of WCM and a company's performance.

2.4 Firm performance

Peel and Wilson (1996) provide the working capital and financial management practices in small businesses and its strategies to improve FP. This study uses normative wealth maximisation financial theory. In this study, the author provides the small business management practices and theoretical and empirical issues that are sophisticated theory-related issues are clearly mentioned in this study.

Molina and Ortega (2002) study provides the effectiveness of human capital management leads to an increase in FP. The author argues that human capital management is more useful to develop firm growth. Additionally, Dahou and Hacini's (2018) human capital management uses a balanced score method to increase the FP.

Chen et al. (2004) argues that supply chain management and strategic purchasing can increase the FP. The study empirically investigated 221 manufacturing firms in the USA. The positive relationship between strategic purchasing and FP. Lawson et al. (2009) provides a significant relationship between strategic purchasing and supply chain management practices that can increase buyer performance improvement. This study was done on 111 UK purchasing executives.

Padachi (2006) discusses important breakthroughs and trends in WCM and their influence on FP. The study was done in small manufacturing firms which will be more useful to increase the FP. Smith et al. (2006) argues that women in top management can increase the FP with 2,500 danish firms. According to Ryan and Trahan (2007), corporate financial control is more suitable to increase the FP, later Premuroso and Bhattacharya (2007) proved there is a good relationship between corporate governance and FP with mediating effect of the technology committee. Many experts, like Koumanakos (2008), have conducted research on the influence of inventory management on FP and corporate value development. Fern andez-Mu niz et al. (2009) argues that occupational safety management can increase a FP through various strategies.

2.5 Theoretical framework

According to Sagan's (1955) theory of WCM, businesses should finance working capital, finance working capital, monitor factors that influence working capital, manage cash, accounts receivable, inventory, accounts payable, the CCC (aggregative approach), and perform measures and analyses to ensure that long-term (fixed) assets are utilised effectively. Aminu and Zainudin (2015) point out that the working capital moments and its theories do have a meaningful relationship for future research. This paper makes clear reference of financial ideas as well. Theoretical analyses of the links between WCM and the company's performance and their effects are provided by Nuhui and D ermaku (2017).

According to Naz et al. (2022), multiple contracts between various parties, agency theory describes how a corporation behaves. Shareholders that contribute money to a company's operations are not thought of as the company's owners; rather, they are the risk takers. In the real world, investors provide money to business managers because they have faith in their capacity to use the money to grow their companies revenues. The

managers sign contracts that outline the duties they must perform and lay out how profits will be divided between them and investors. The agreements made by managers are challenging to implement since it is extremely challenging to specify and anticipate potential complications.

By limiting a firm's participation to just two groups – managers and shareholders – agency theory further simplifies a business. A company's operations must undoubtedly take into account how its actions may affect various stakeholder groups. On the one hand, a company that is answerable to its shareholders can attract and keep equity investment; on the other hand, the interests of other groups of stakeholders must also be taken into proper consideration.

2.6 WCM strategies

According to the finance principle, long-term money should be used to finance long-term assets, and vice versa. This is what maturity matching or hedging strategy does. According to this plan, the financial instrument's maturity and the maturities of the currents are matched. In the event that existing asset realisation is delayed, there is no safety net or flexibility available. Despite the significant danger of bankruptcy, it is still the best option.

2.7 Benchmarking for WCM and FP

Benchmarking for WCM involves comparing the practices and performance of different business entities with their competitors in terms of their WCM efficiency. This includes examining their CCCs, inventory turnover, debtors collections, and creditors payments. In order to effectively benchmark in the area of WCM, businesses must maintain updated and accurate financial records (Gothwal and Raj, 2018). Additionally, they should regularly investigate the practices and performance of their competitors and quickly adjust strategies in order to make improvements in their own WCM approaches. Finally, conducting regular cash flow forecasting can also help in monitoring performance and identify potential commercial investments (Kamuri, 2022). Benchmarking for FP involves comparing financial and non-financial aspects of the company against industry competitors. This includes analysing the financial ratios such as return on capital, debt service costs, operating profit margin, and inventory turn over (Wamba et al., 2016). Additionally, a company's operational performance should also be evaluated against that of their competitors, such as the time taken to launch a product or service, customer service and technical support levels. To effectively benchmark against competitors, a company utilising cash flow forecasting software and other financial ratios to track and stay ahead of trends. This can help pinpoint opportunities and potential areas of improvement. Regular customer feedback surveys are also useful in order to effectively benchmark against industry performance.

3 Review methodology

The study literature review is based on WCM with a specific interest in WCM on FP. The study does need to specify a broader perspective of WCM. The current methodology part is divided into five stage process of systematic literature review.

- 1 define the scope of SLR
- 2 searching strategy formulation
- 3 screening/filtering criteria
- 4 quality assessment procedure
- 5 data reporting and analysis.

Table 1 Boolean search

<i>Concept</i>	<i>Keywords</i>	<i>Boolean operators</i>
Working capital management	Working AND capital AND management AND firm AND performance	AND, OR 'exact phrase,' 'adjective' forward and backward search and limits (publication date, publication types. language)
Working capital	Working AND capital AND firm AND performance	AND, OR TRUNCATION(Working*) 'exact phrase,' 'adjective' forward and backward search and limits (publication date, publication types. language)
Firm profitability	Working AND capital AND firm AND profitability	AND, OR TRUNCATION(Firm*) 'exact phrase,' 'adjective' forward and backward search and limits (publication date, publication types. language)

3.1 *searching strategy formulation*

The most important keywords are 'WCM' 'FP' 'firm profitability' and 'working capital' used in this study. Different Boolean operators were used in this study like 'WCM and FP', and 'WCM on FP'. Here there are various databases to collect the articles like Google scholar, and Scopus databases. We used these search terms to locate pertinent and related literature on the subject. Additionally, some of the documents were collected from the emerald insight and Elsevier, Wiley online library. The peer-reviewed qualitative and quantitative articles were taken for the study. There are a number of articles published by researchers in the area of WCM. Although keyword searching is more prominent to getting to analyse which keywords have been more repeatedly used and which keywords have less use, we can easily analyse through this literature review.

3.2 *screening*

In this study, open access articles were taken the study, the English language was taken, remaining languages were excluded. Document type was taken as fully published articles and theses and news reports and recent news from various were taken for the study. There is no exclusion process. To determine whether each article fits within the parameters of this study, namely the influence of WCM on FP, the title, abstract, keywords, and findings of each publication were first reviewed. The final selection of 55 articles for the study's analysis was made.

3.3 Quality assessment

Quality of assessment inclusion is based on the two parameters. The first criterion is to complete the details of WCM, there is no limitation in this study. The second criterion is the collection of articles published in well-reputed journals, in this study we can include Q1, and Q2 journal articles also included in this study. To establish if the papers were accepted for consideration for this study, the full texts of all 55 articles were meticulously scrutinised. Individually evaluating each article's applicability for inclusion, the authors weeded out any that were unrelated.

3.4 Data reporting and analysis

In this study, most of the papers are empirical studies. Major studies using panel data regression model were using data analysis process. There are two major themes that were considered for the study. First thing is to collect data on WCM and FP. We have also analysed the country-wise, topic-wise, and methodology-wise findings provided in this systematic literature review table.

Figure 1 Top regions of the study (see online version for colours)

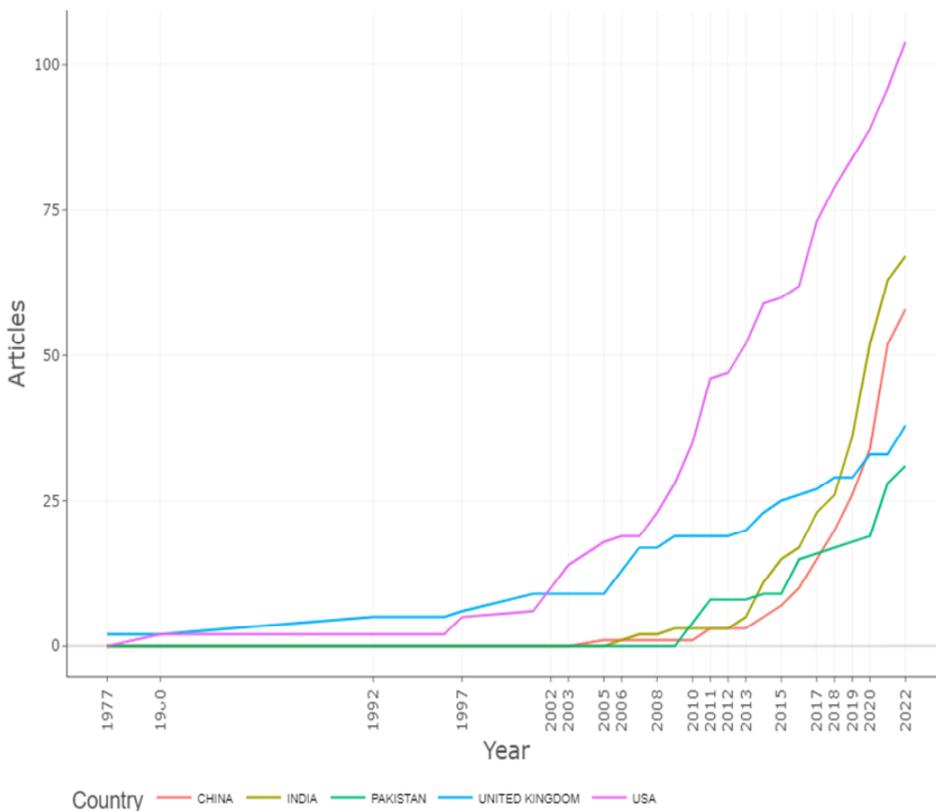


Table 2 Systematic literature review

Author	Title	Methodology	Key findings
Ren et al. (2019)	Working capital management and firm performance in China	Regression model study: China manufacturing companies	Working capital management is a significant effect on the profitability of Chinese firms
Bhatia and Srivastava (2016)	Working capital management and firm performance in emerging economies: evidence from India	Non-financial firms from BSE in India Data collection period: 2002–2014 179 firms	India finds a negative relationship between working capital management and firm performance for profitability
Aktas et al. (n.d.)	Is working capital management value enhancing? Evidence from firm performance and investments	Large samples of US firms 1982–2011	An optimal level of improving stock and operating superior firm performance
Hassan et al. (2014)	Effect of WCM on firm performance: an empirical study on non-financial listed firms in Pakistan	Non-financial firms listed on the Karachi stock exchange	Management receivables and account receivables are a positive effect on firm performance in China
Konak and Güner (2016)	The impact of WCM on FP: empirical evidence from the BIST SME industrial index	29 companies in Borsa Istanbul industrial index from 2011–2014 pooled OLS test	The effect of WCM is a positive effect on firm performance.
Kayani et al. (2020)	WCM and FP relationship: an empirical investigation from Australian firms	Australian-New Zealand firms in global financial crisis, 2008–2020	WCM is a positive relationship with firm performance, but the cash conversion cycle and the inventory conversion period are a negative impact on firm performance
Hussain et al. (2021)	Macroeconomic factors, WCM, FP, a static and dynamic panel analysis	21 companies of fuel and energy sector, 2013–2018, secondary data	Exchange rate and interest rate are significant effects to increase the firm performance
Simon et al. (2017)	The quadratic relationship between WCM and FP: evidence from the Nigerian economy	Sample of 75 non-financial firms Listed in Nigerian NSE, 2007–2015, secondary data, Panel regression	The optimal level of investment in WCM will increase the firm performance and sustainable growth
Zaryawati et al. (2017)	WCM and FP of small and large firms in Malaysia	Bursa Malaysia from the period 2011–2013. Balanced panel data analysis using Stata 12 software	WCM will increase the firm's profitability in small and large firms will small differentiation
Akbar et al. (2021)	The global financial crisis, WCM, and FP: evidence from Islamic market index	Econometric model, Pakistan, Data collection 2002–2013	There is a concave relationship between the Net trade cycle, WCM, and FP
Naz et al. (2022)	Corporate governance, WCM, FP: from new insights from agency theory	Non-financial firms in national stock exchange in Pakistan, 2009–2018,	WCM partially mediates the relationship between corporate governance and FP
Tariq and Rehan (2013)	WCM and FP: evidence from Pakistan	Cement sector in Pakistan, five-year period (2007–2011), panel data methodology	Inventory turnover is a negative impact on FP
Sawarni et al. (2021)	WCM, FP, and nature of business: empirical evidence from India	414 non-financial firms listed in BSE, 2012–2018,	By maintaining lower NTC automatically FP increases
Pakdel and Ashrafi (2019)	Relationship between WCM and performance of the firm in the different business cycles	80 companies were listed on the Tehran stock exchange. From 2002–2013. Panel data method	There is a negative significant relationship between the management of WCM and FP

Table 2 Systematic literature review (continued)

<i>Author</i>	<i>Title</i>	<i>Methodology</i>	<i>Key findings</i>
Usman et al. (2017)	Impact of WCM on FP: evidence from Scandinavian countries	Data collected from Denmark, Sweden, and Norway during the period 2003–2015	Working capital and current ratio are positively increasing the firm's profitability
Studiyatno et al. (2017)	WC, FP, and firm value: an empirical study on the Indonesian stock exchange	Manufacturing companies are listed on the Indonesian stock exchange 2010–2013, purposive sampling method	Current assets are a positive impact on FP and current liabilities negative impact on FP
Seth et al. (2020)	Exploring predictors of WCM and their influence on firm performance: an integrated DEA-SEM approach	212 Indian manufacturing companies, 2008–2019	DEA-SEM provides an efficient performance model for better decision-making of firm performance
Phuong and Hung (2020)	Impact of WCM and firms' profitability: study in Vietnam	Generalised least square regression method, observation of 5,295 firms listed on the stock exchange in Vietnam, 2009–2018	Average payment, average receivables, and cash conversion cycle are Non-linear relationships with FP
Gör-Mehtap ÖNER Marmara Üniversitesi İşleme Fakültesi İngilizce İşletme Bölümü (2016)	The impact of WCM and firms' profitability: evidence from Borsa İstanbul	Sample: 110 manufacturing companies data collection period: 2005–2014 panel data methodology	Increasing of firm's profitability because of WCM
Singh et al. (2017)	WCM and firms' profitability: a meta-analysis	46 research articles studied WCM and firms' profitability	WCM is a negative impact on a firm's profitability
Altaf and Ahmad (2019)	Working capital financing, FP, financial constraints: evidence from India	Secondary financial data, 437 non-financial Indian companies, 2007–2016, two-step generalised method	Inverted U shape relationship between WCF and FP
Sharma and Kumar (2011)	Effect of WCM on firms' profitability: evidence from India	Sample: 263, 2000–2008 data collection period, OLS multi regression method	WCM and profitability positively increase the Indian company's performance
Arachehi et al. (2018)	The impact of WCM on FV: evidence from a frontier market	Sample: 44 listed companies Colombo stock exchange, period of 2011–2015, panel data regression methodology	Managing investment on working capital of their firm performance
Vijayakumaran (2019)	The efficiency of WCM and firm value: evidence from Chinese listed firms	Regression model Measured by Tobin Q ratio	Provide ideas to managers to create value for the firm performance. The net trade-cycle negatively impacts on firm's value
Padachi (2006)	Trends in WCM and its impact on FP	Sample: 58 small manufacturing firms, Panel data analysis, 1998–2003, paper industry	Positive impact on working capital financing
Osman Hassan and Willy Muturi (2020)	Effect of WCM and firms FP: evidence from water processing firms in Putland	Convenient sample, multi-linear regression method, study period 2011–2015, Somalia country	WC is no effect on firm performance
Altaf (2020)	Working capital financing, FP and financial flexibility: evidence from the Indian hospitality industry	Sample: 185 Indian hospitality firms, Two-step generalised method,	WCF is a negative impact on firm performance

Table 2 Systematic literature review (continued)

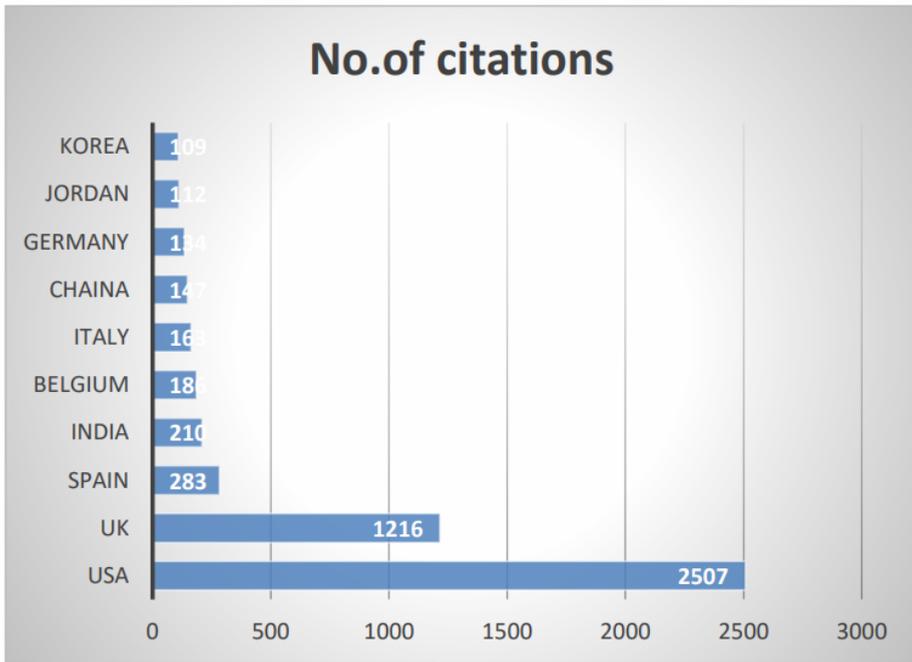
Author	Title	Methodology	Key findings
Adden Awmi Abuhomousand Abuhomous (2017)	WCM and the firm's profitability in the textile industry of Bangladesh	Secondary data: annual reports of textile firms listed in the daka stock exchange, 2000–2018, quartile study, Hausman test, fixed effect regression	Inventory conversion profit is increasing firm performance
Enqvist et al. (2013)	The impact of WCM on firm profitability in the different business cycle: evidence from India	Finnish listed companies with over 18 years of data	Positive effect on WCM and firms' profitability
Nurein and Din (2017)	WCM and firm value: role of firm innovativeness	400 listed firms in bursa Malaysia, 2006–2015, Fixed regression estimation,	Innovative capabilities have positive effects to increase the firm performance
Takou and Manyo (2013)	Effect of WCM and firm profitability on Nigerian quoted companies	35 listed firms, stratified random sampling method, 2000–2009	To examine the effect of account receivables on the profitability of Nigerian firms
Panda et al. (2021)	WCM, Macroeconomic impacts, and firm profitability: evidence from Indian SMEs	The feasible generalised least square regression model, 2010–2017, Indian SMEs	Macroeconomic parameters significantly influence Indian SMEs
Bhuyan et al. (2021)	WCM and FP in emerging markets: a case of Bangladesh	Food and overall manufacturing sector. Secondary data Dhaka stock exchange	WCM is a Positive effect of FP
Hazineli (n.d.)	WCM, operational efficiency and firm performance: a comparative analysis	Sample: 55 firms, Data collection period: 2009–2019, Borsa Istanbul	The firm has a positive impact on operational profit, operating cash flow, and earnings before tax to increase the firm performance
Martínez-Solano and García-Teruel (2011)	Effects of WCM on SME profitability	Survey: 8872 SMEs, Data collection period: 1996–2002, Panel data methodology, Spanish firms	The cash conversion cycle is a positive effect on SMEs' profitability
Jahfer (2015)	Effect of WCM on firms' profitability: evidence from Sri Lanka	Data collection period: 2008–2013, Manufacturing companies in Sri Lanka, model: fixed asset model	WCM is a negative relationship with firms profitability
Rahman et al. (2019)	Effect of WCM and FP: the role of ownership	Sample: 77 firms Random sample technique, Period: 2011–2015 Fixed effect model	WCM's positive effect on firm performance was positively affected by institutional ownership
Marius Cristianand Laura Raisa (n.d.)	WCM and from firm profitability: evidence Romanian industry	50 listed companies, Bucharest stock exchange	WCM negatively affects sales outstanding
Wasuzazzaman (2015)	WC and firm value in an emerging market	Sample: 192 firms period: 1999–2008 ordinary least square regression technique	Working capital efficiency will increase the firm value
Adden Awmi Abuhomousand Abuhomous (2017)	Net working capital and firm growth	Sample: Jordanian firms period: 1999–2015	The positive relationship between market expectation and market-based financial performance
Paul and Mitra (2018)	Analysis of the effect of WCM on the profitability of the firm: evidence from the Indian steel industry	Panel data regression model, period: 2000–2016, Indian steel industry	WCM is a positive impact on firm performance in Indian steel companies

Table 2 Systematic literature review (continued)

<i>Author</i>	<i>Title</i>	<i>Methodology</i>	<i>Key findings</i>
Koumanakos (2008)	The effect of inventory management on firm performance	Data collection: ICAP database Greek firms (food, chemical, textile) Period:2000–2002, cross-section linear regression	The higher level of inventory is preserved and will get a lower level of returns
Mueni and Maturi (2015)	Does financing policy decision influence firm performance: a Kenyan perspective	64 listed companies in Kenya, period: 2009–2013, descriptive statistics, correlation, Regression analysis	Financial policy is a Positive effect on firm performance
Molina and Ortega (2002)	Can effective human capital management lead to increased firm performance?	405 north American firms, Survey: 2000	Higher customer loyalty will improve firm performance in terms of Tobin's, TRS
“The Impact of Working Capital Management on Firm Profitability: Evidence from Selected Wholesale Trade Firms in Addis Ababa, Ethiopia.” (2021)	Impact of WCM on firm profitability	62 firms, purposing sampling method, 2015–2020,	WCM significantly effect of profitability of the wholesale firm
Wahid Ahmed Hashed and Rahman Shaik (2022)	The nexus between inventory management and firm performance: a Saudi Arabian perspective	The pooled regression model, 2016–2020, Saudi Arabian stock exchange,	Inventory management is positively associated with ROA and ITR
Ighoroje and Umeora (2022)	WCM optimality and firm value	Consumer goods from Nigeria, 2013–2020, random and fixed effect model	Cash conversion efficiency will increase firm value
Ahmad et al. (n.d.)	Firm profitability and working capital policies: an investigation of commercial banks in Pakistan	25 banks from Pakistan, 2015–2019, regression method, listed in Pakistan stock exchange	Working capital financial policy is a positive effect on firm performance
Ryan and Trahan (2007)	Corporate financial mechanism and firm performance	Sample: 84 firms Period:1984–1997	The value-based management system will improve economic firms
Dahou and Hacini (2018)	Effect of human capital management on firm performance via balanced score card	4 tele communication organisation, Jordan, 65 questionnaires, Anos analysis	Human capital management is a positive effect on firm performance
Smith et al. (2006)	Do women in top management affect firm performance?	2500 largest Danish firms. 1993–2001,	Women's top management jobs have a positive effect on firm performance

Table 2 Systematic literature review (continued)

<i>Author</i>	<i>Title</i>	<i>Methodology</i>	<i>Key findings</i>
Baños-Caballero et al. (2019)	Net operating working capital and FV: a cross country analysis.	Sample: 30 countries firm Period: 1995–2013	NWC is more helpful to investors as well as firm development
Pucci et al. (2015)	Measuring the relationship between marketing assets, IC, and FP	Knowledge capital score card method	The positive relationship between IC and FP
Oseifuah and Gyekye (n.d.)	Global financial crisis and FV: evidence from JSE listed non-financial firms	Secondary data McGregor database, 75 firms Period: 2003–2012 Panel data regression methodology	U shape relationship between WCM and FV
Chen et al. (2004)	Strategic purchasing, supply management, and FP.	221 USA manufacturing firms	Positive relationship between strategic purchasing, supply management with firm performance
<i>New Technologies and Firm Performance/157 Strategic Responses to New Technologies and Their Impact on Firm Performance (n.d.)</i>	New technologies and their impact on firm performance	106 firms, 1992–2000 period Post hoc analysis	Positive effect on communication channel with firm performance
Ali et al. (2020)	Predicting FP through supply chain finance: a moderated model link	330 textile sector of SMEs, Amos of SEM model	Supply chain finance positive relationship between the firm performance
Kroos and Manikas (2014)	Cash flow management and manufacturing firm financial performance: a longitudinal perspective	1233 manufacturing firms, generalised estimating equation methodology	Reducing days of sales outstanding lead to improving firm performance
Yazdanfar and Öhman (2015)	Debt financing and FP: an empirical study based on Swedish data	200 employees, 2009–2012, 3SLS modelling, Correlation analysis	Negative significant relationship between debt financing and FP

Figure 2 Most cited countries (see online version for colours)

4 A state of the art Literature review findings

This current study provides an in-depth literature review of WCM on FP. The SLR find that there is a high number of articles were published during the period of 2022. The SLR provides the complete literature and content analysis of the study.

4.1 Methodology and tools used

The published articles use three main methodologies: empirical, theoretical, and survey-based. The empirical technique, which is employed in more than 90% of investigations is the most prevalent of these methodologies. A further finding from SLR is that panel regression is the main methodology employed, in the vast majority of empirical articles. authors like the panel data regression model were used in this topic (Arachchi et al., 2018; Bhutto et al., 2015; Bhuyan et al., 2021; Mehtap, 2016; Oseifuah and Gyekye, n.d.; Tariq and Rehan, 2013; Vijayakumar, 2019; Zimon and Tarighi, 2021). There are many authors using Pooled regression method using in this study (Altaf and Ahmad, 2019; Jahfer, 2015; Konak and Güner, 2016; Nurein and Din, 2017; Oseifuah and Gyekye, n.d.; Paul and Mitra, 2018; Phuong and Hung, 2020; Wahid Ahmed HASHED and Rahman SHAIK, 2022; Wasiuzzaman, 2015; Yazdanfar and Öhman, 2015).

4.2 Themes researched

Some of the important papers investigated the impact of WCM on FP. Some authors provide WCM to increase the firm profitability and firm value. In developing countries WCM growth positively influences FP. Phuong and Hung (2020) provides sector-wise and firm details about FP and firm value of the firm.

5 Discussion

The literature review on the impact of WCM on FP revealed many notable findings.

First, WCM has a significant and positive impact on a firm's performance. For instance, studies have shown that an increase in a firm's current assets leads to an increase in its ROA, operating profit, and market value (MV). At the same time, lower short-term liabilities and higher WCM intensity have been associated with better performance of the firm (Salloum et al., 2015, 2016).

Second, WCM has an impact on the financial stability of a firm. As a rule, lower financial leverage, better liquidity, and lower bankruptcy costs have been linked to higher working capital efficiency (WCE).

Third, WCM affects a firm's competitive advantage. The level of WCM adopted by a firm serves as an indicator of its competitiveness within the industry. For example, firms with better WCM have been found to have higher market shares at the industry level.

Fourth, WCM impacts the long-term performance of a firm. Studies have found that firms with higher WCE performed better in key financial ratios such as Tobin's Q, return on equity (ROE), and gross profit margin (Nunes and Machado, 2020).

Finally, firms with better WCM tend to experience higher efficiency in resource utilisation. Studies have found that firms with low inventory turnover time, higher liquidity, and lower receivables collection period have higher profitability. Overall, the literature shows that WCM is positively associated with FP, conveying a clear link between the two variables. By finding the right balance between liquidity, solvency, and profitability, firms can gain a significant performance advantage (Sindhwani and Malhotra, 2016).

The efficient management of working capital is essential to the longevity and success of a manufacturing firm. This is because manufacturing has traditionally been a capital-intensive industry, requiring substantial upfront investments in long-term assets such as plant and equipment, as well as large amounts of working capital, such as cash, accounts receivable, and inventory, to sustain operations (Jain and Ajmera, 2020). As such, effective WCM is critical to ensure that the business has enough capital on hand to fund ongoing operations, pay its workers, and generate returns for shareholders or owners. In general, effective WCM can improve the performance of a manufacturing firm in several ways (Gunasekaran, 1998). First, proper WCM can help the firm to reduce the amount of time it takes to collect payments from its customers, thus freeing up cash to meet current obligations (Barrows et al., 2016). Second, by managing inventory more effectively, the firm can ensure that it has the right products for sale at the right times, thereby minimising lost sales and improving customer satisfaction levels. Finally, effective WCM can help the firm to reduce the costs associated with debt, such as interest payments.

6 Scope of the research

Even though there have been many studies on the impact of WCM on the performance of businesses around the world, there are still some uncharted territories that might be the subject of future research. The WCM impact on corporate performance has been demonstrated empirically in numerous research, both in a good and negative way, according to SLR. The investigation will only be affected by less theory. To improve business performance, some research uses mediating and moderating effects. Strategies for WCM are used in the service and manufacturing industries to improve business performance. Both developing and developed nations should use data from companies that are listed on stock exchanges.

The impact of WCM should be examined in the future using current data, say academics. Based on company profitability, several studies were conducted. The performance and profitability of various small-scale sectors, including agriculture, food and beverage, lodging, and fishing, will be important in the future (Krishnamoorthy and Lima, 2014). The focus should be on improving WCM techniques in the future. Why WCM is a more important determinant of a firm's performance is a study subject that emerges from several literature review studies. In the event that WCM and company performance are negatively impacted, the following will be used to cover the situation and return the company back to a profitable state. Future studies should focus on financial management tactics for business executive (Dubey et al., 2020).

7 Managerial implications

The key managerial implication of WCM on FP is that managers need to carefully manage the working capital of their firm. This involves controlling short-term assets and liabilities in order to ensure optimal efficiency in operations. To ensure that the firm is able to generate sufficient cash flow to fund ongoing operations, managers need to monitor cash balances, inventory levels, and debt payments. Strategies should focus on improving accounts receivable collection, reducing inventory costs, and shortening the account payable period. Additionally, managers should stay apprised of changes in market conditions and sales forecasts, which may influence the need for additional working capital. By effectively managing working capital, firms can help boost their performance and profitability.

8 Theoretical implications

The theoretical implication of WCM on FP is that a firm should manage its working capital properly in order to maximise its chances of long-term success in the competitive environment. WCM involves a variety of activities such as maintaining sufficient short-term liquid assets, collecting and paying customer accounts promptly, efficiently optimising inventory management, appropriately managing foreign exchange and risks, and closely monitoring the accounts receivable turnover ratio. Such activities can enhance a firm's current working capital or cash flow for short-term investments and improve its ability to weather challenging operating conditions. Moreover, by effectively monitoring and managing working capital, managers can create a competitive edge by

minimising costs, enabling operations to be accelerated, and improving overall customer satisfaction. Furthermore, improved WCM can increase the firm's opportunity for improved profitability and long-term sustainability. By managing its working capital efficiently, a firm can mitigate the risks that arise from economic and financial cycles, industry shocks, economic volatility, and changing market conditions.

9 Conclusions

The paper's main goal is to provide a thorough literature evaluation of WCM in business performance. Additional WCM techniques are provided in the evaluation, as well as to offer a thorough analysis of the literature study and make recommendations for additional research. WCM is to calculate the company's profits, which will result in the firm's actual condition. WCM procedures are required in some (Chalmers and Zieliński, 2022) nations in order to implement and improve business performance. In terms of methodology, some nations use a small sample size and a restricted area of coverage to demonstrate future claims.

The competitiveness of the firm produces the economic growth rate of the firm; thus, an author should concentrate on numerous nations and comparative study of the WCM analysis. Some variables don't have a beneficial effect on the performance of the organisation; the author should keep an eye on that issue, offer sound remedies, and collect samples to offer a good fit to the company. Along with Krishnankutty et al. (2022), the author should focus on applying capital structure choices and hedge behaviour to Indian companies listed on the Bombay stock market. Very few research should use the national stock exchange; in the future, data should be gathered from NSE-listed companies. Two primary strategies were found in the overall review. The first factor, the CCC, is more important when evaluating WCM. Large samples from developing nations are required, and current financial data should be used. Manufacturing companies require additional money to improve company success. Initiatives by the government to finance new start-ups to grow the business

The newly formed strategic formulation of the ideas always influences how well the company does. The author should focus on the marketing, operational, and financial results of publicly traded financial and non-financial enterprises in all firms in the future. Enhance the small company firms' strategy and policies. What are the determining elements used to enhance business performance in the twenty-first century? Give policymakers and shareholders a fresh conceptual framework to use in order to positively impact the company. To provide a comprehensive literature review analysis of WCM and business performance linkages, the review used two key approaches. The following vision is to develop strategies to raise business performance.

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